Recent Changes and Their Impact on Contribution Rates

David Lamoureux, Deputy Chief Actuary
Kerry Worgan, Senior Actuary

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Agenda

- Recent changes impacting employer rates
  - New smoothing policy
  - New asset allocation and actuarial assumptions
  - New risk pooling structure
- Impact of recent investment experience on rates
- Accelerated pay down of unfunded liabilities

New Smoothing Policy

The New Smoothing Policy

- Adopted by the CalPERS Board in April 2013
- Designed to pay down unfunded liability faster
- 5 year direct rate smoothing
  - 30 year closed amortization of gains and losses
  - Five year ramp up/down

The New Smoothing Policy

- Will impact employer contribution rates for the first time in FY 2015-16
- No impact on normal cost
- Higher contributions short term
- Lower contributions long term (25 + years)
- Better funded status long term
- Will result in more volatile years in normal year but less volatile rates in extreme year (e.g. 2008-09)

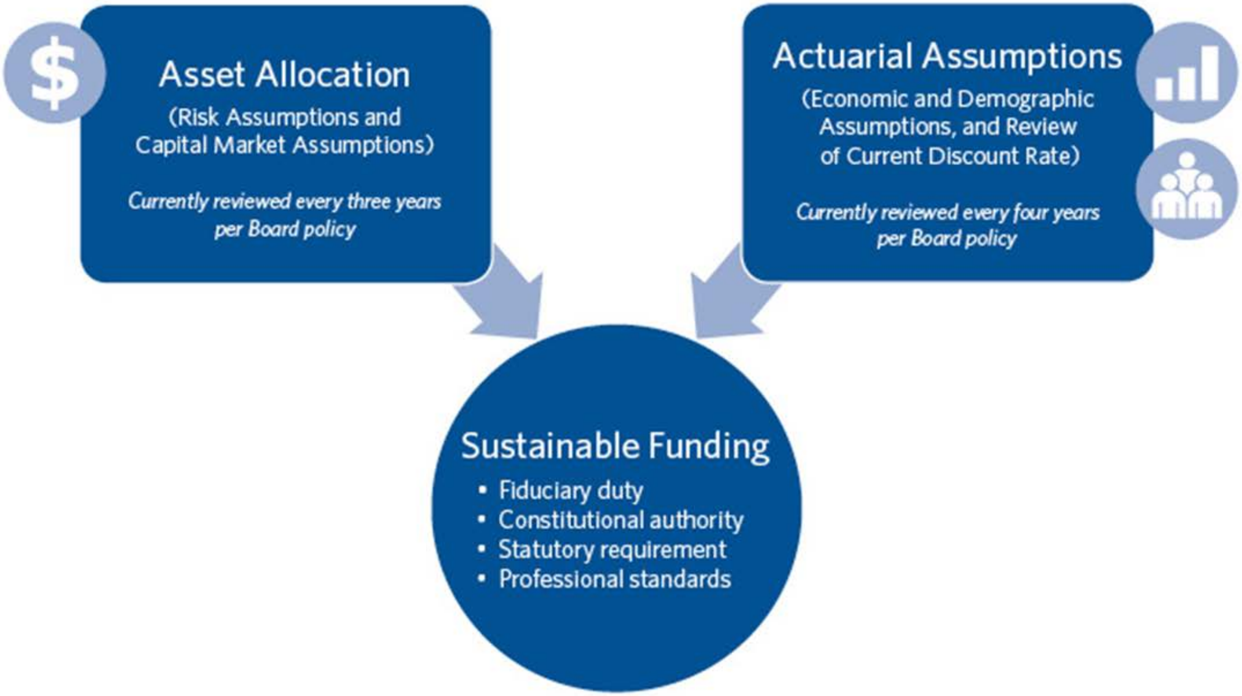
The New Smoothing Policy

- Estimated impact specific to each plan was included in the last year's actuarial valuation report
- Actual impact for FY 2015-16 was included in your most recent actuarial valuation report

New Asset Allocation and Actuarial Assumptions

Asset Liability Management (ALM) Process

- ALM is key to any pension system



ALM Decisions at February Board Meeting

- Asset allocation
- What assumptions to use
  - Economic
  - Demographic
- How to adjust the funding
  - Amortization period
  - Smoothing period

Portfolios Considered by the CalPERS Board

Asset Allocation of Candidate Portfolios				Current Policy Portfolio
Asset Class Component	Portfolio A	Portfolio B	Portfolio C	
Global Equity	47%	50%	52%	50%
Fixed Income	19%	17%	16%	17%
Inflation Assets	6%	5%	4%	4%
Private Equity	12%	12%	12%	14%
Real Estate	11%	11%	11%	9%
Infrastructure and Forestland (Infra. & Forest)	3%	3%	3%	2%
Liquidity	2%	2%	2%	4%
Expected Compound Return (1-10 yrs.) :	7.15%	7.27%	7.35%	7.25%
Blended Return (1-60 yrs.)[1] :	7.56%	7.66%	7.72%	7.63%
Expected Volatility :	11.76%	12.22%	12.52%	12.45%
Potential Discount Rate:	7.50%	7.50%	7.50%	7.50%

[1]Blended return is the combination of the short-term (1 to 10 year) and the long-term (11 to 60 year) expected returns after deducting administrative fees.

Review of Actuarial Assumptions

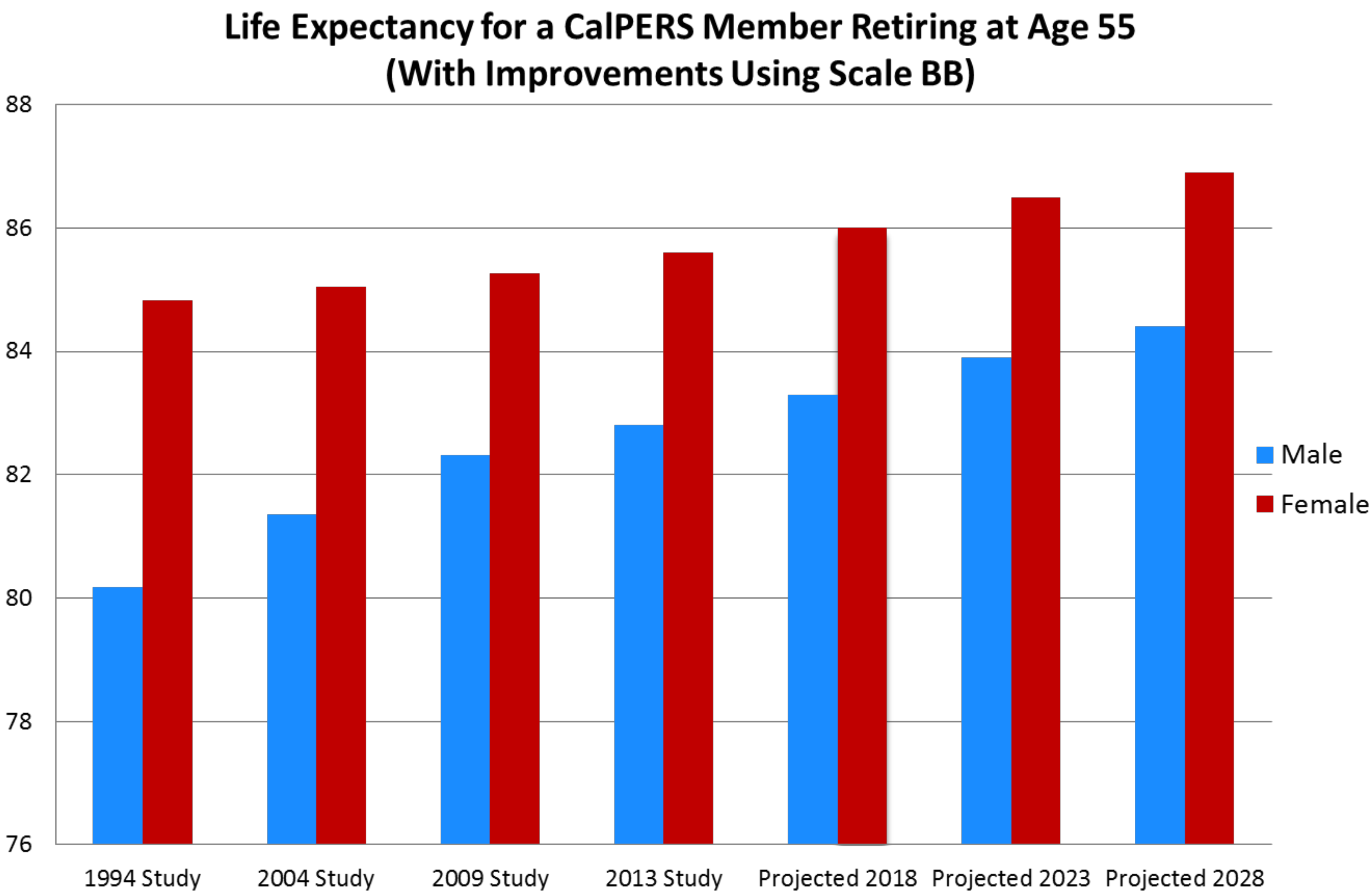
- Experience Studies are conducted to verify that Actuarial Assumptions reflect the most recent experience of the plan
- Board policy requires CalPERS to perform an Experience Study at least every four years
- The most recent Experience Study reviewed both economic and demographic assumptions based on data from 1997 to 2011

Review of Economic Assumptions

- No changes were made
  - Kept discount rate at 7.5 percent
  - No changes to wage inflation, price inflation and payroll growth

Review of Demographic Assumptions

- Highlights of findings and recommendation
  - Lower disability retirement rates
  - Higher service retirement rates (earlier retirement) for safety members, especially State POFF and State CHP
  - Greater salary increases for safety members later in their careers
  - Lower rates of mortality (longer life expectancy) for all members



Life Expectancy for a CalPERS Member Retiring at Age 55
(With Improvements Using Scale BB)
88
86
84
82
80
78
76
1994 Study
2004 Study
2009 Study
2013 Study
Projected 2018
Projected 2023
Projected 2028
Male
Female

Mortality Improvements

- Board adopted 20 year mortality projection
  - Projected to 2028

How to Adjust the Funding?

- Board was presented with various options
- Board adopted staff recommendation to follow current Board policy:
  - Amortize over 20 years
  - Smooth impact over 5 years (5 year ramp-up and ramp-down)
- First year impact of cost increase not until FY 2016-17

Impacts of New Assumptions on Employer Rates

- Estimated impact of new assumptions for each plan was included in the projected rates included in the 2013 actuarial valuation reports
- Actual impact for each plan will first be reflected in the valuation report that will be provided in the summer/fall of 2015

Impact on PEPRA Normal Cost

- Recommended assumptions will increase normal cost
- PEPRA requires 50 percent cost sharing of normal cost for PEPRA members
- Normal cost has to increase by 1 percent to trigger an increase in member contribution rate

Impact on PEPRA Normal Cost

	Estimated Increase in PEPRA Total Normal Cost After Assumption Changes
Schools (2% at 62)	0.7%
Public Agency Miscellaneous	0.3% to 0.7%
Public Agency Safety	0.3% to 2.0%

Impact on member rate will be in FY 2016-17

New Risk Pooling Structure

Risk Pooling Background

- Risk pooling is a type of insurance arrangement
  - Spreads demographic risks
  - Purpose is to avoid large liability losses
  - Serves to smooth the employer contribution rate
- Risk pooling was implemented with the 2003 actuarial valuations

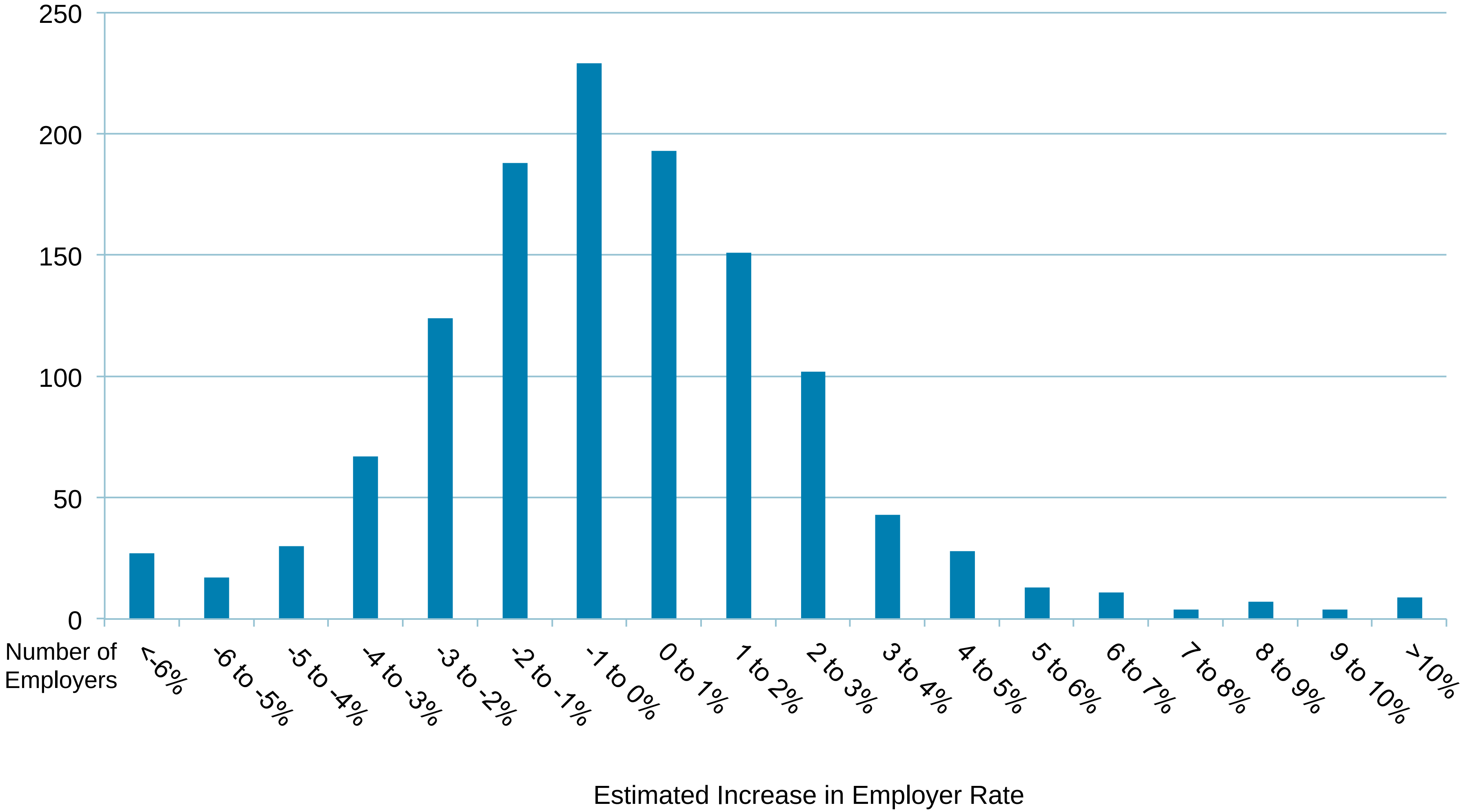
Why Changes to Risk Pooling?

- Staff identified several issues while reviewing pooling
  - Funding Issue
  - Equity Issue
  - Employer Contribution Rate Volatility issue
- Biggest contributor to these issues was PEPRA:
  - Closing of classic risk pools

Changes to Risk Pooling

- Combining all pools into two (Miscellaneous and Safety)
- Allocating pool's unfunded liability to each plan based on total liability instead of payroll
- Collecting employer contributions toward unfunded liability and side fund as dollar amounts instead of a percentage of payroll
  - Contribution rate will continue to be available for information purposes through the valuation report

Estimated Impact of Changes to Risk Pooling:



Benefits of Changes

- Retains benefits of risk pooling
- Does better job at addressing equity/fairness issue
- No overall contribution increases
- Provides ability for employers to pay down their share of pool's unfunded liability

Timing of Impact of New Risk Pool Structure on Rates

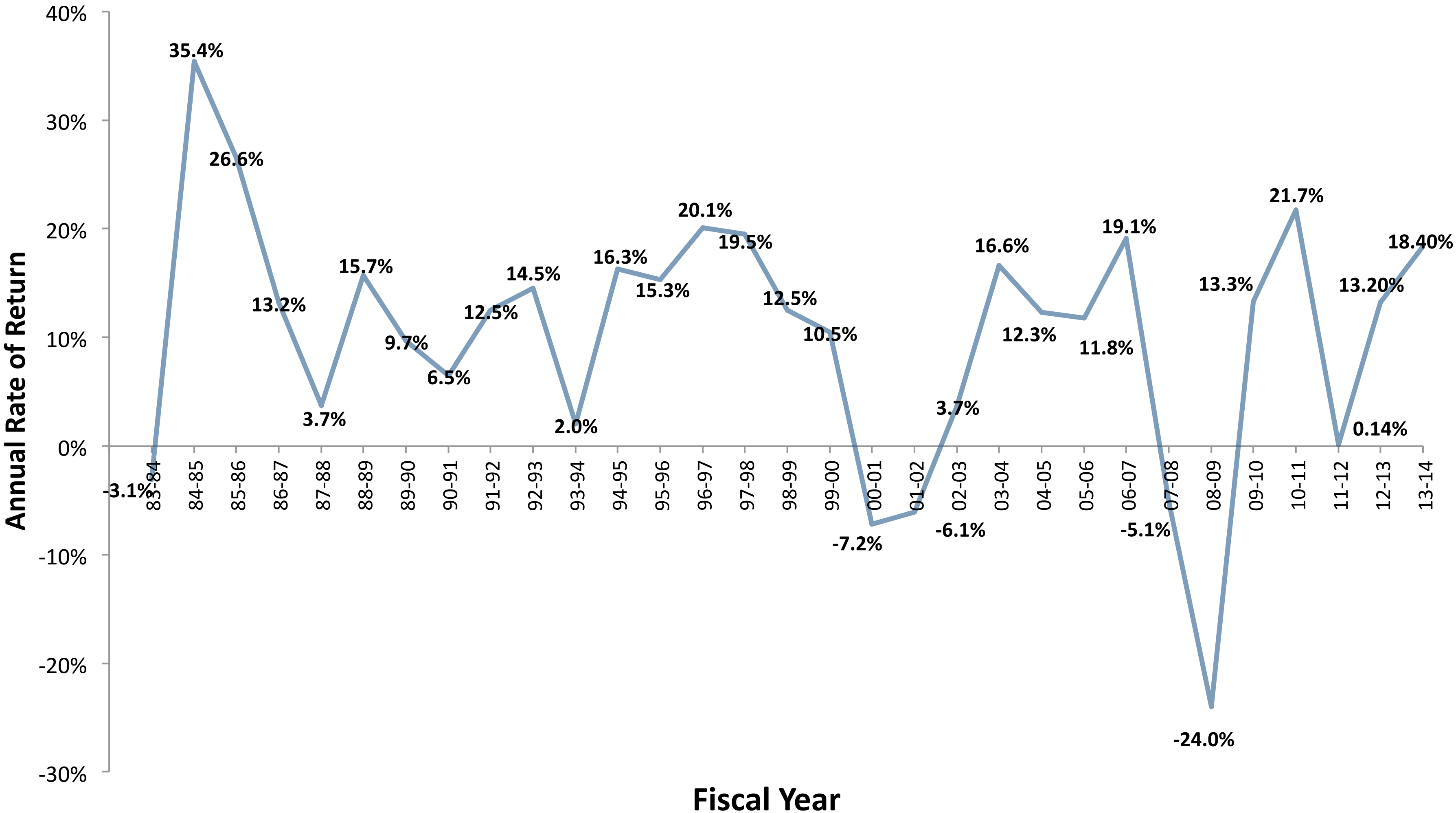
- Will impact employer contribution rates for the first time in FY 2015-16
- Impact specific to each pooled plan was included in the rate set by the June 30, 2013 valuation report

Impact of Recent Investment Experience on Employer Rates

Impact of Investment Experience on Rates

- Investment experience is the primary cause of volatility
- Occurs when the actual investment return is different from the assumed discount rate
- Current discount rate assumption is 7.50 percent

Historical Annual Rates Of Return for the California Public Employees Retirement Fund
(Fiscal Year 1983-84 to 2013-14)

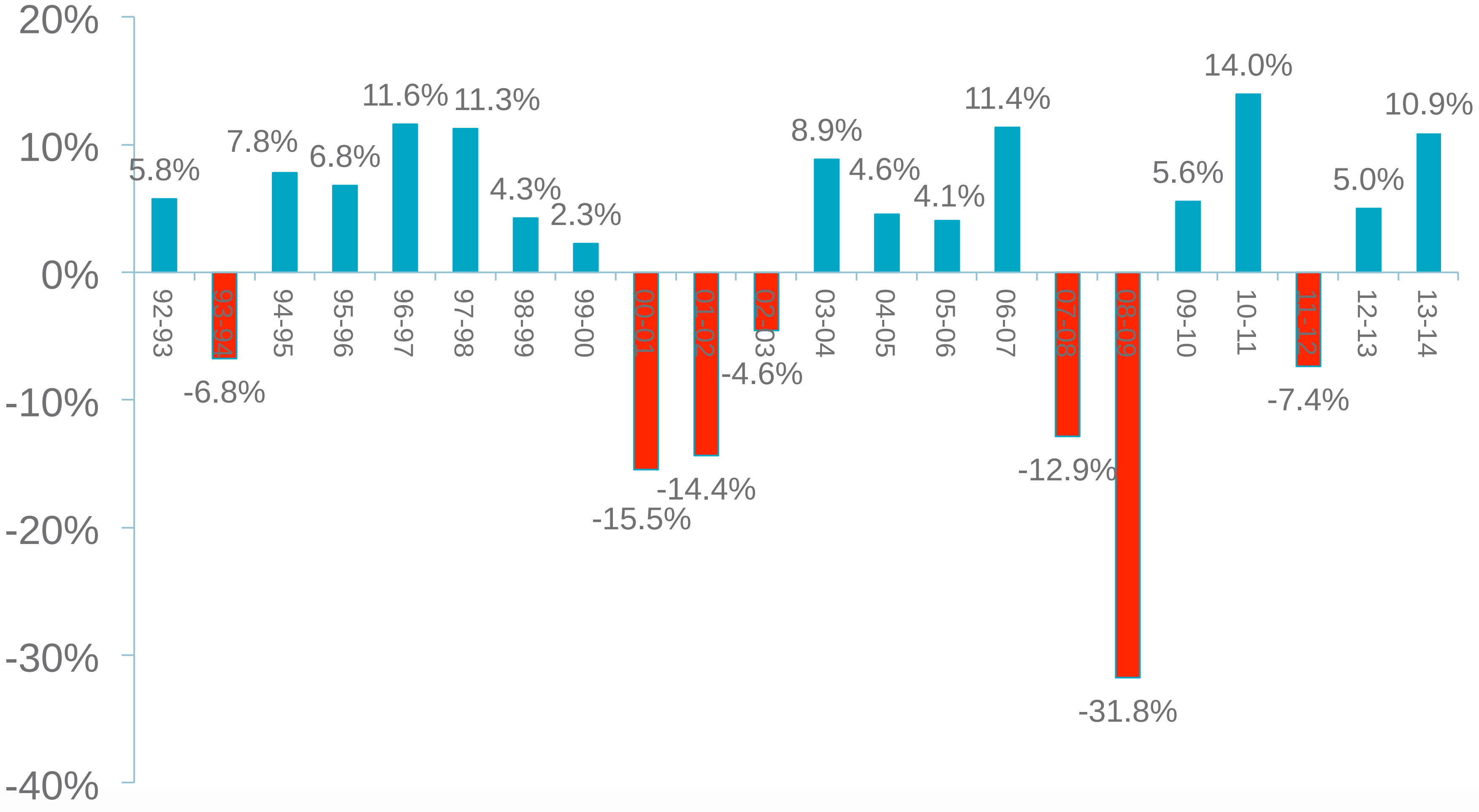


Data Source - CalPERS Comprehensive Annual Financial Reports (1984-2013)

Historic Returns Earned by CalPERS

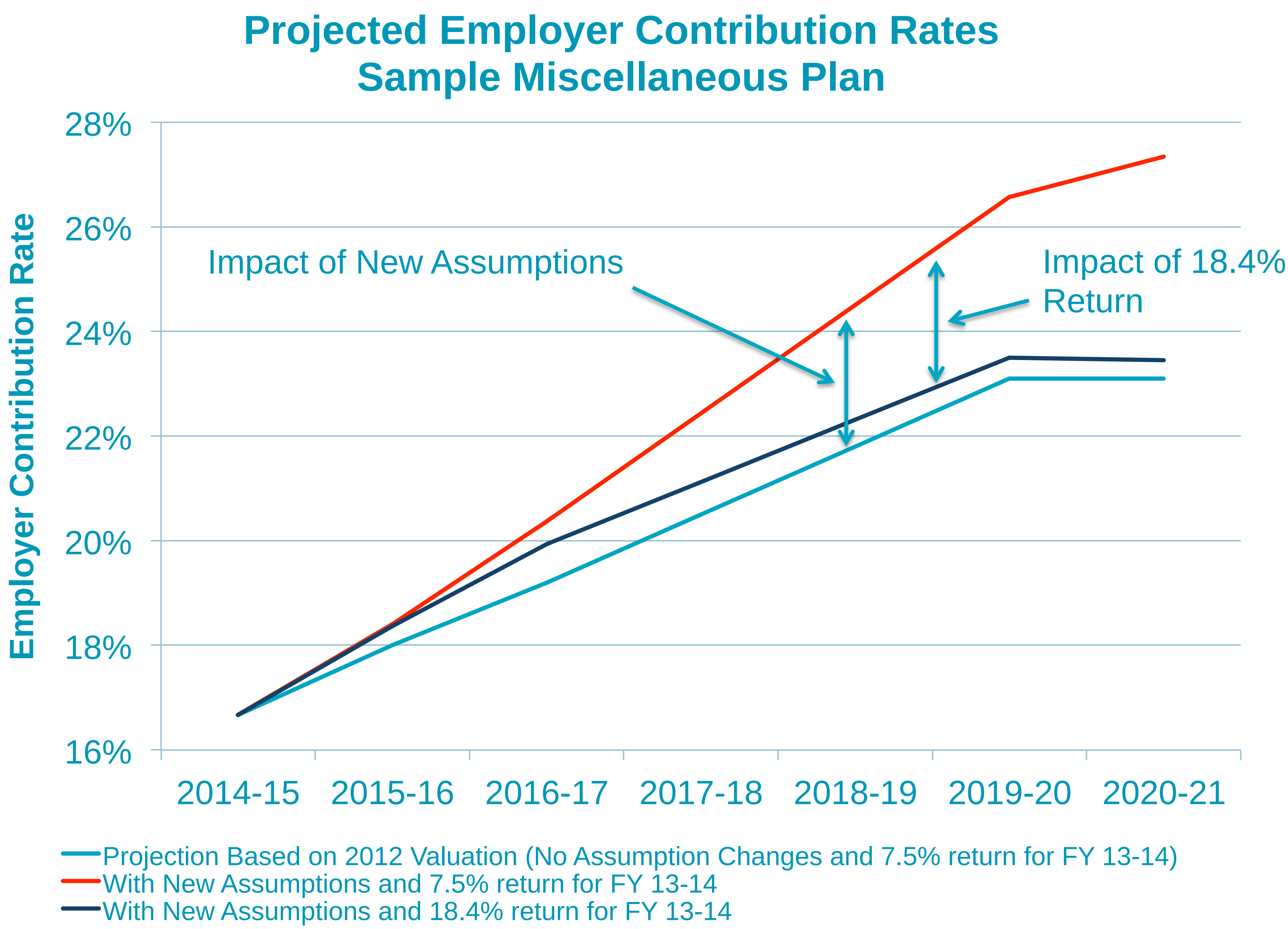
1 year	5 year	10 year	20 year	30 year
18.4%	13.1%	7.2%	8.4%	10.1%

Investment Returns – Actual vs. Expected



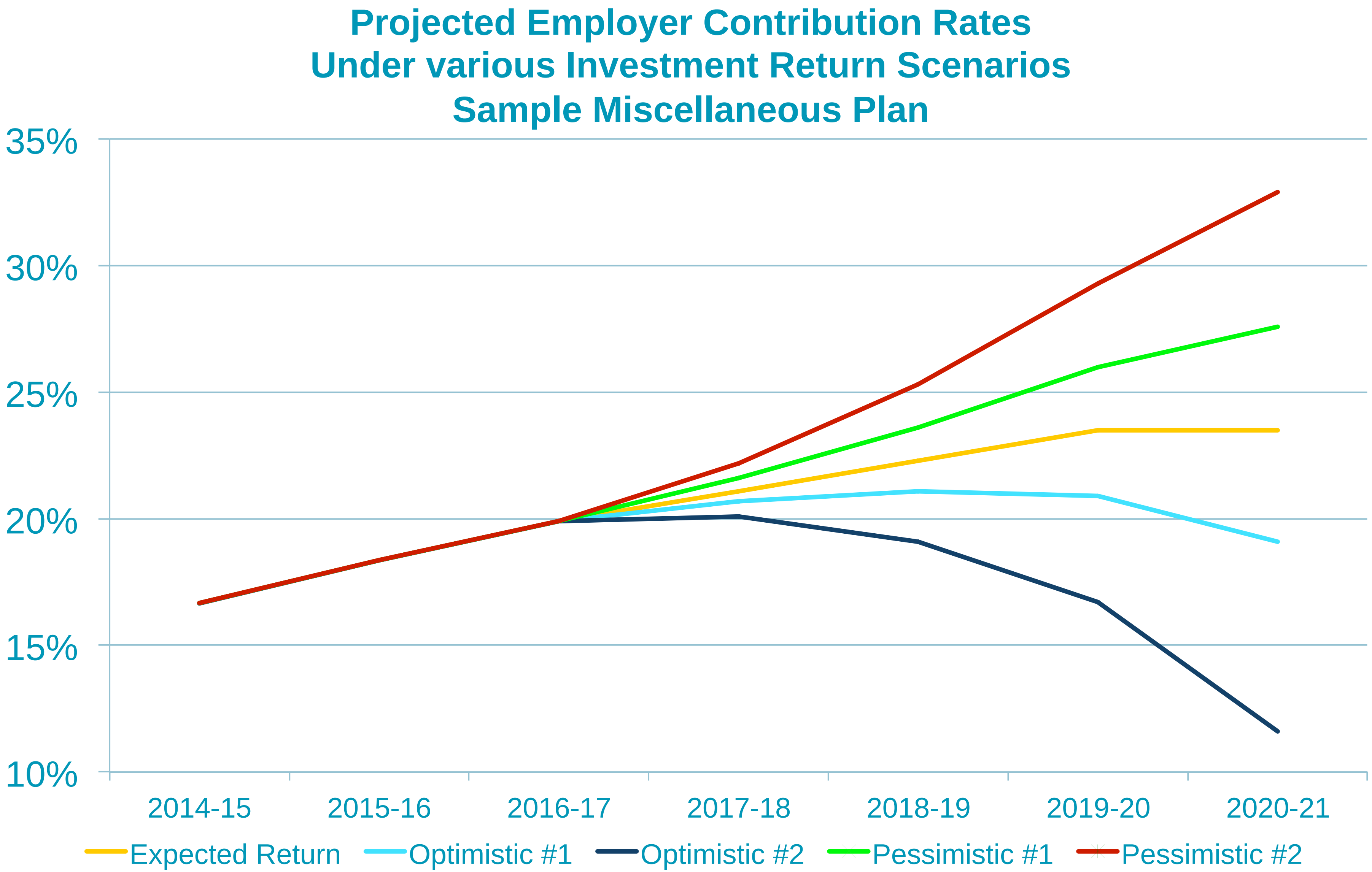
Recap of Timeline

- FY 2015-16
  - New smoothing policy begins
  - New pooling structure begins
- FY 2016-17
  - New assumptions take effect

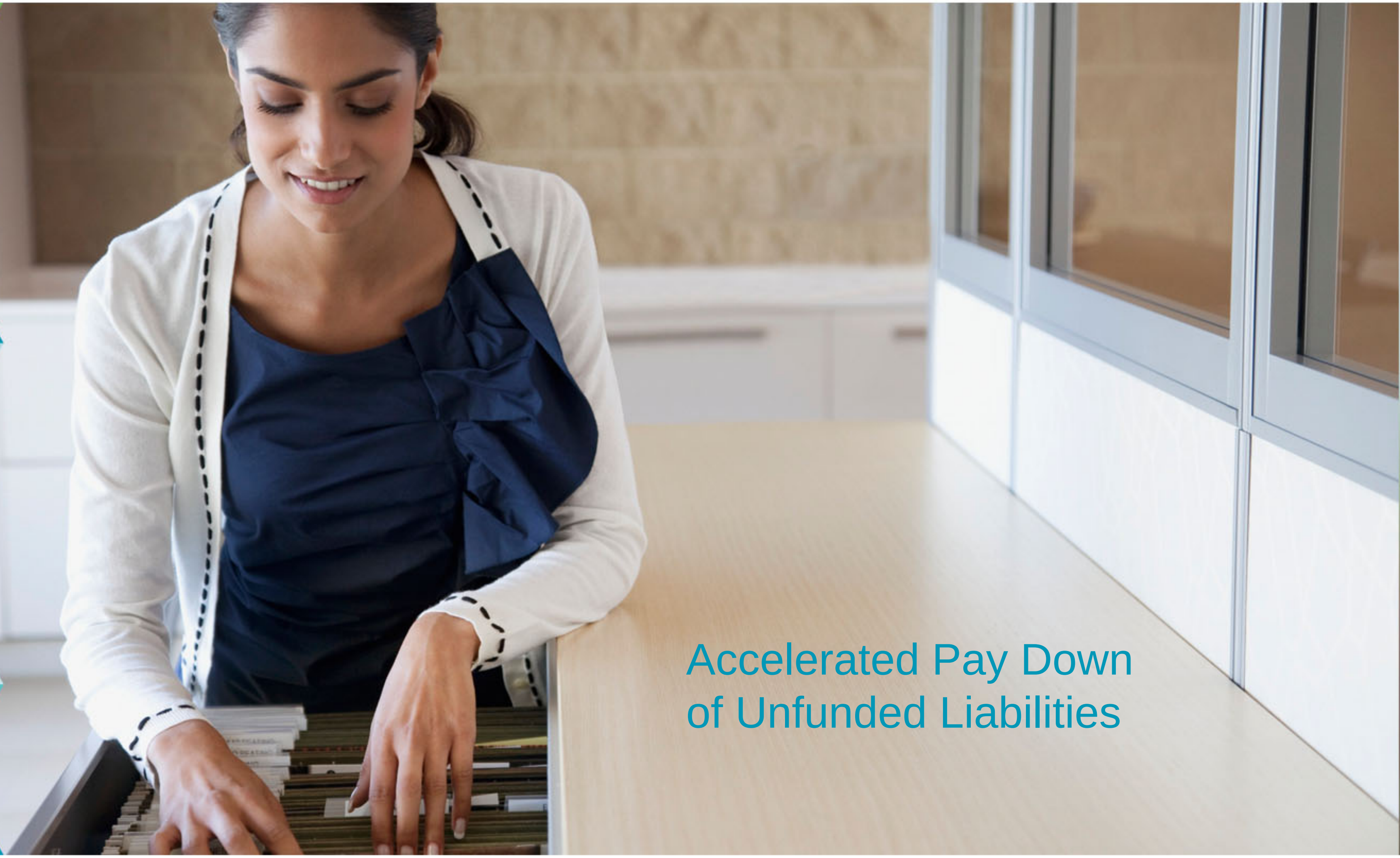

Projected Employer Contribution Rates
Sample Miscellaneous Plan
Employer Contribution Rate
28%
26%
24%
22%
20%
18%
16%
Impact of New Assumptions
Impact of 18.4% Return
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
Projection Based on 2012 Valuation (No Assumption Changes and 7.5% return for FY 13-14)
With New Assumptions and 7.5% return for FY 13-14
With New Assumptions and 18.4% return for FY 13-14

Where can I see my future rates?

- Investment return sensitivity analysis
- Included in your annual actuarial report
- Estimated rates under five scenarios
  - Expected return – 7.5 percent per year
  - Optimistic #1 – 12.0 percent per year
  - Optimistic #2 – 18.9 percent per year
  - Pessimistic #1 – 2.8 percent per year
  - Pessimistic #2 – -3.8percent per year



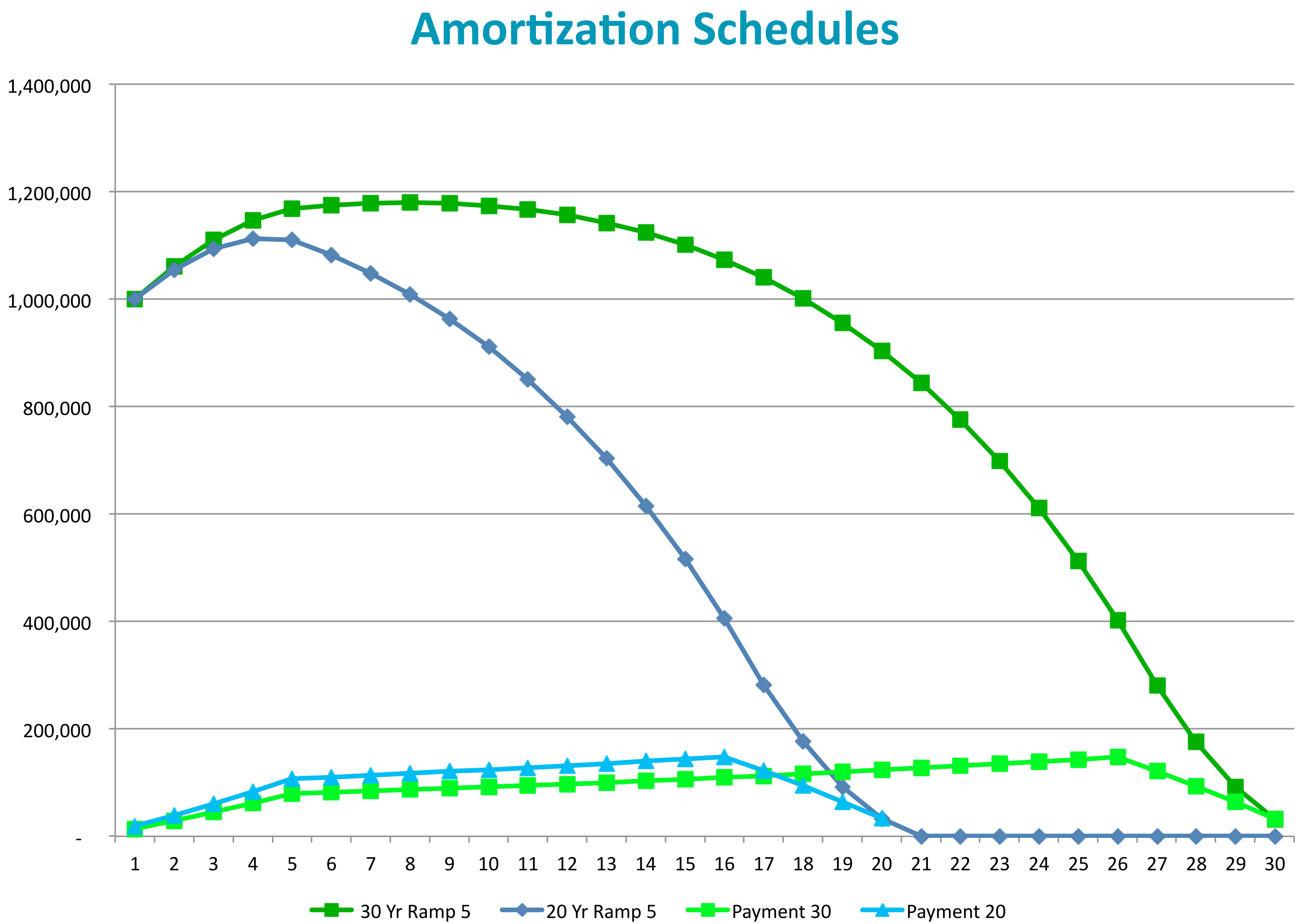
Projected Employer Contribution Rates
Under various Investment Return Scenarios
Sample Miscellaneous Plan
35%
30%
25%
20%
15%
10%
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
Expected Return
Optimistic #1
Optimistic #2
Pessimistic #1
Pessimistic #2

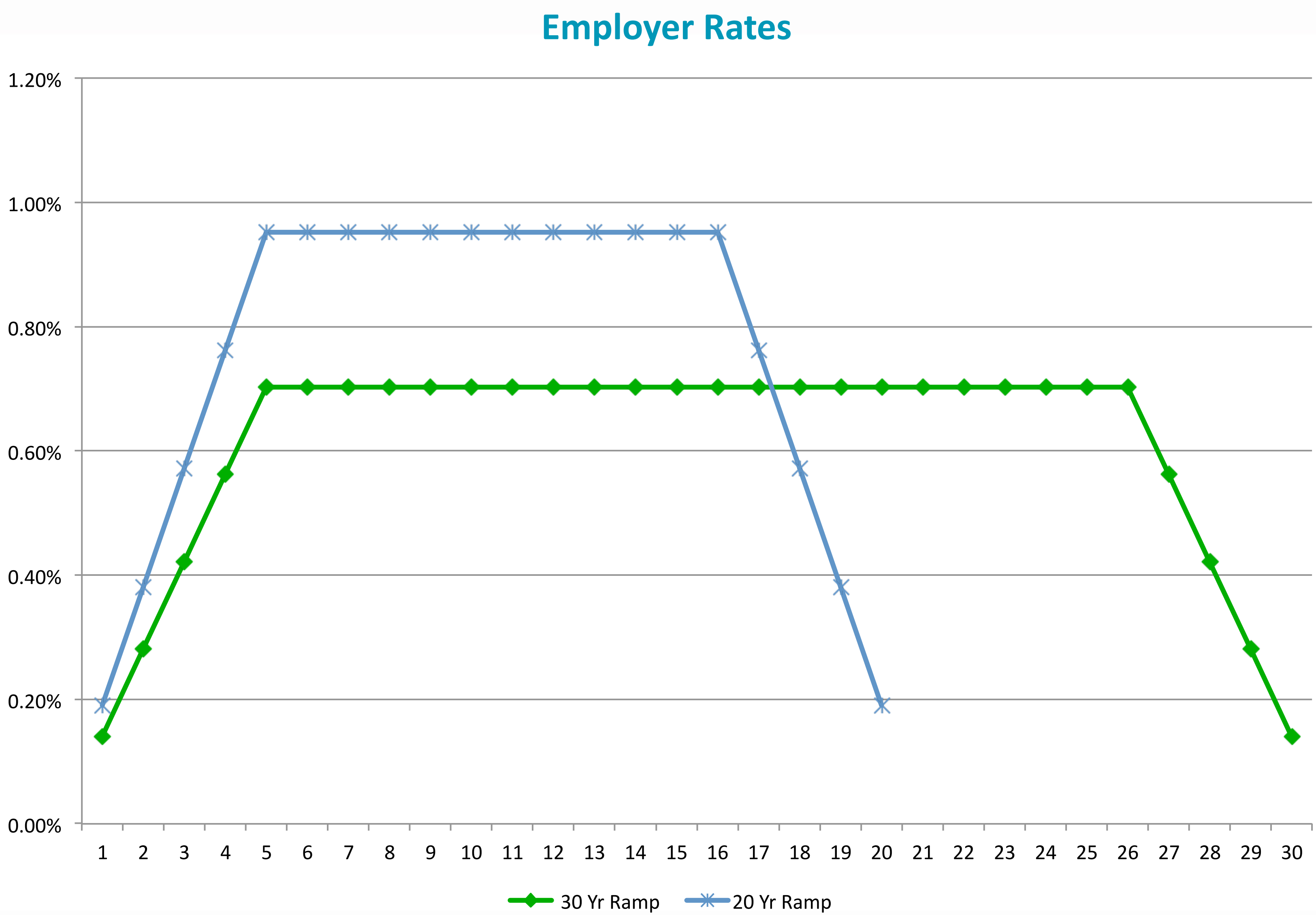


Accelerated Pay Down of Unfunded Liabilities

Accelerated Pay Down – An example

- New Unfunded Liability of $1,000,000
  - Paid off over 30 years (Experience gain/loss)
  - Paid off over 20 years (Change in assumptions)
- Payroll assumed to be $10,000,000
- Illustrates long-term cost and interest component
- Employer Rates in Valuation Report are Minimum Contribution Amounts


Amortization Schedules
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
30 Yr Ramp 5
20 Yr Ramp 5
Payment 30
Payment 20


Employer Rates
1.20%
1.00%
0.80%
0.60%
0.40%
0.20%
0.00%
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
30 Yr Ramp
20 Yr Ramp

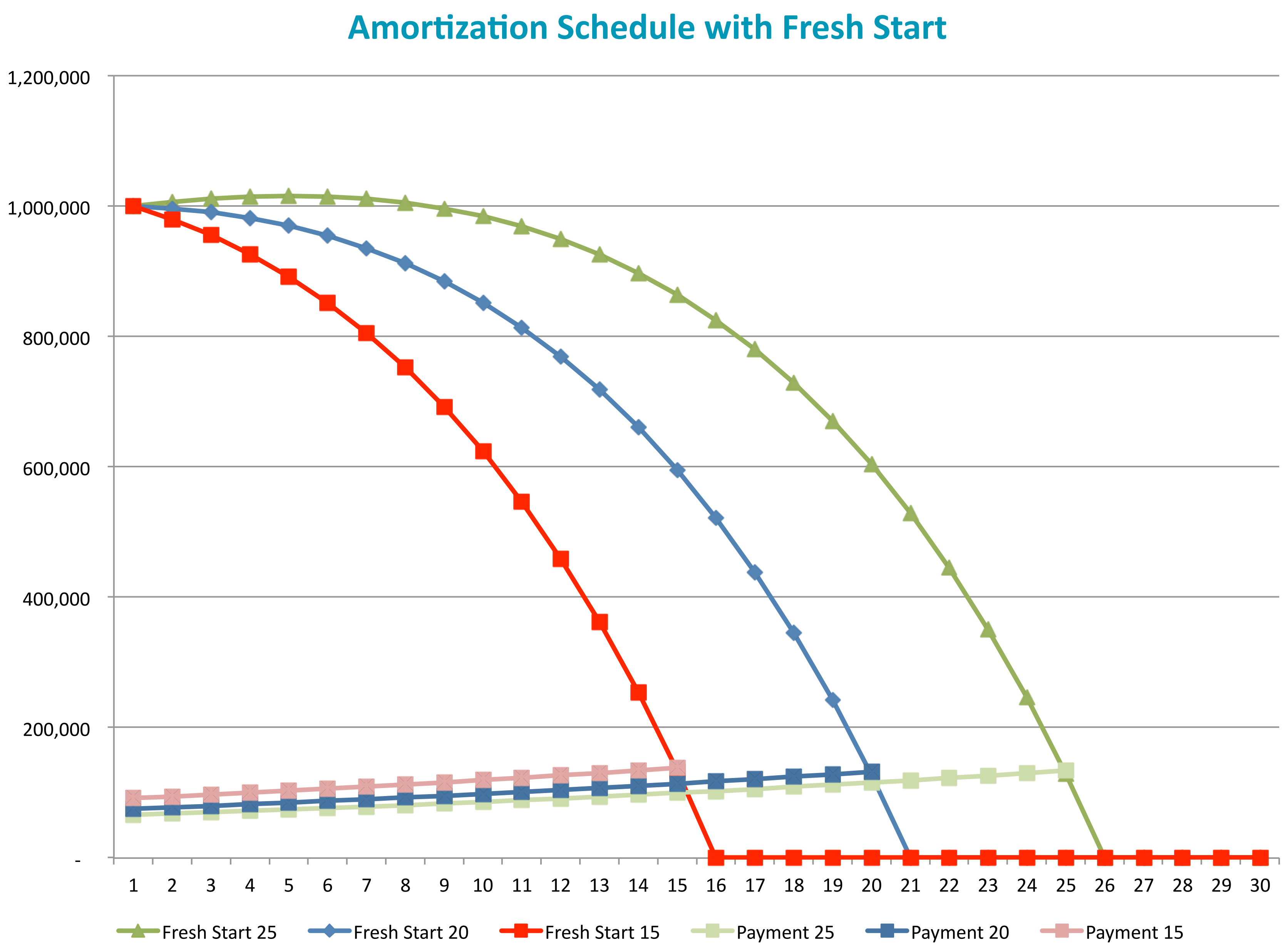
Accelerated Paydown – example (continued)

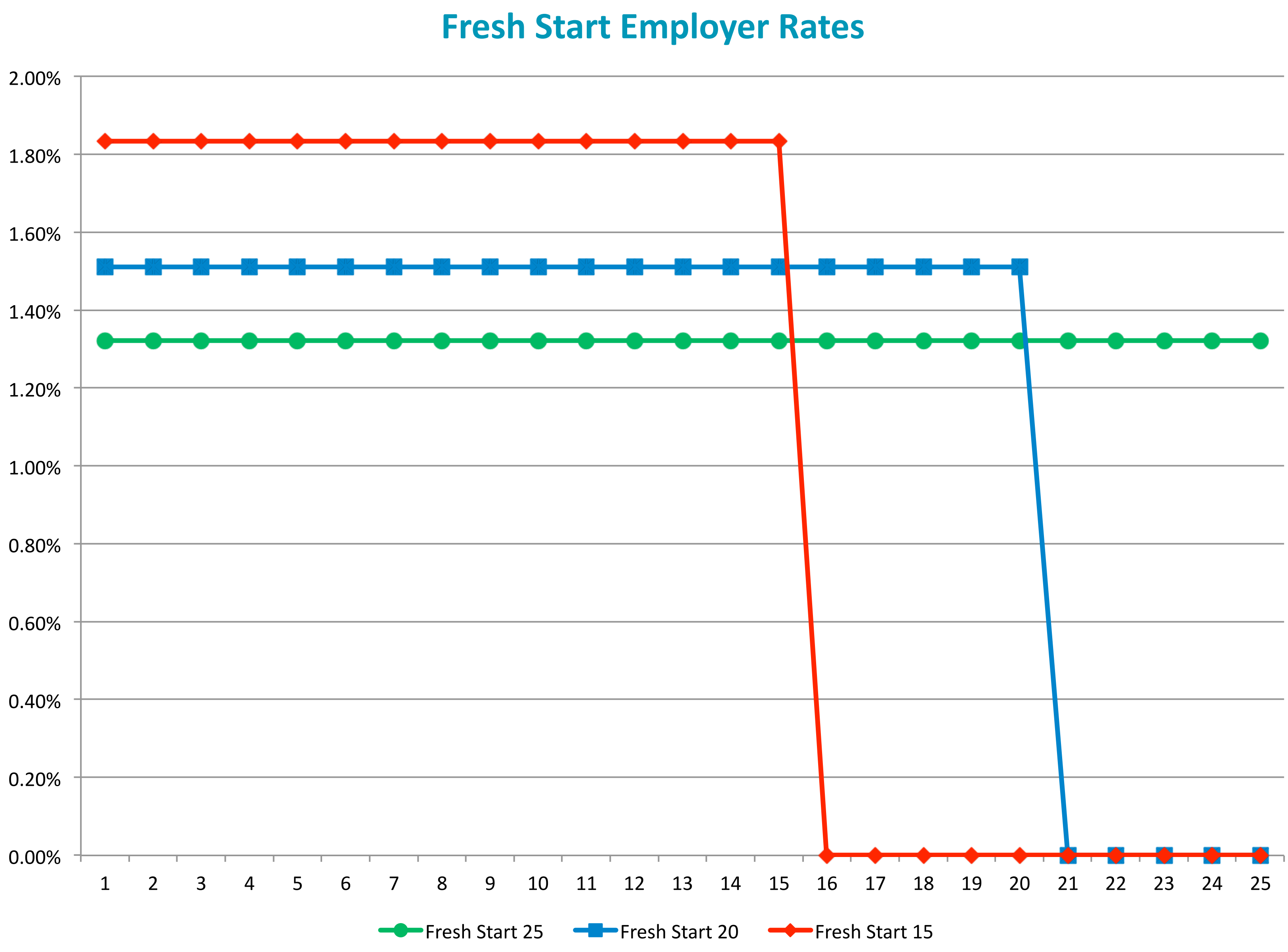
Period	Total Payments	Total Interest
30 years	$ 2,878,900	$ 1,878,900
20 years	$ 2,038,400	$ 1,038,400

- Savings of $840,000 on $1,000,000
- Paying down sooner saves significant interest!

How Do We Pay Down Sooner?

- Option 1 - Fresh Start
  - Discuss with your Plan Actuary
  - Select Affordable Period
  - New Table Provided in Your Valuation Report


Amortization Schedule with Fresh Start
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Fresh Start 25
Fresh Start 20
Fresh Start 15
Payment 25
Payment 20
Payment 15


Fresh Start Employer Rates
2.00%
1.80%
1.60%
1.40%
1.20%
1.00%
0.80%
0.60%
0.40%
0.20%
0.00%
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Fresh Start 25
Fresh Start 20
Fresh Start 15

Accelerated Pay Down – with Fresh Start

Fresh Start	Total Payments	Total Interest
25 years	$ 2,409,800	$ 1,409,800
20 years	$ 2,028,900	$ 1,028,900
15 years	$ 1,705,000	$ 705,000

- Paying down sooner saves significant interest!
- Caution not to overextend, since the bases cannot be reset

Accelerated Pay Down – with Fresh Start

- New Section in Valuation Report at 6/30/13

Alternate Amortization Schedules

The amortization schedule shown on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the passible savings in doing so. Therefore, we have provided alternate amortization schedules to help analyze your current amortization schedule and illustrate the advantages of accelerating payments towards your plan's unfunded liability of $74,534,829 as of June 30, 2015, which under the minimum schedule, will require total payments of $178,561,670. Shown below are the level rate payments required to amortize your plan's unfunded liability assuming a fresh start over the various periods noted. Note that the payments under each scenario would increase by 3 percent for each year into the future.

Level Rate of Payroll Amortization

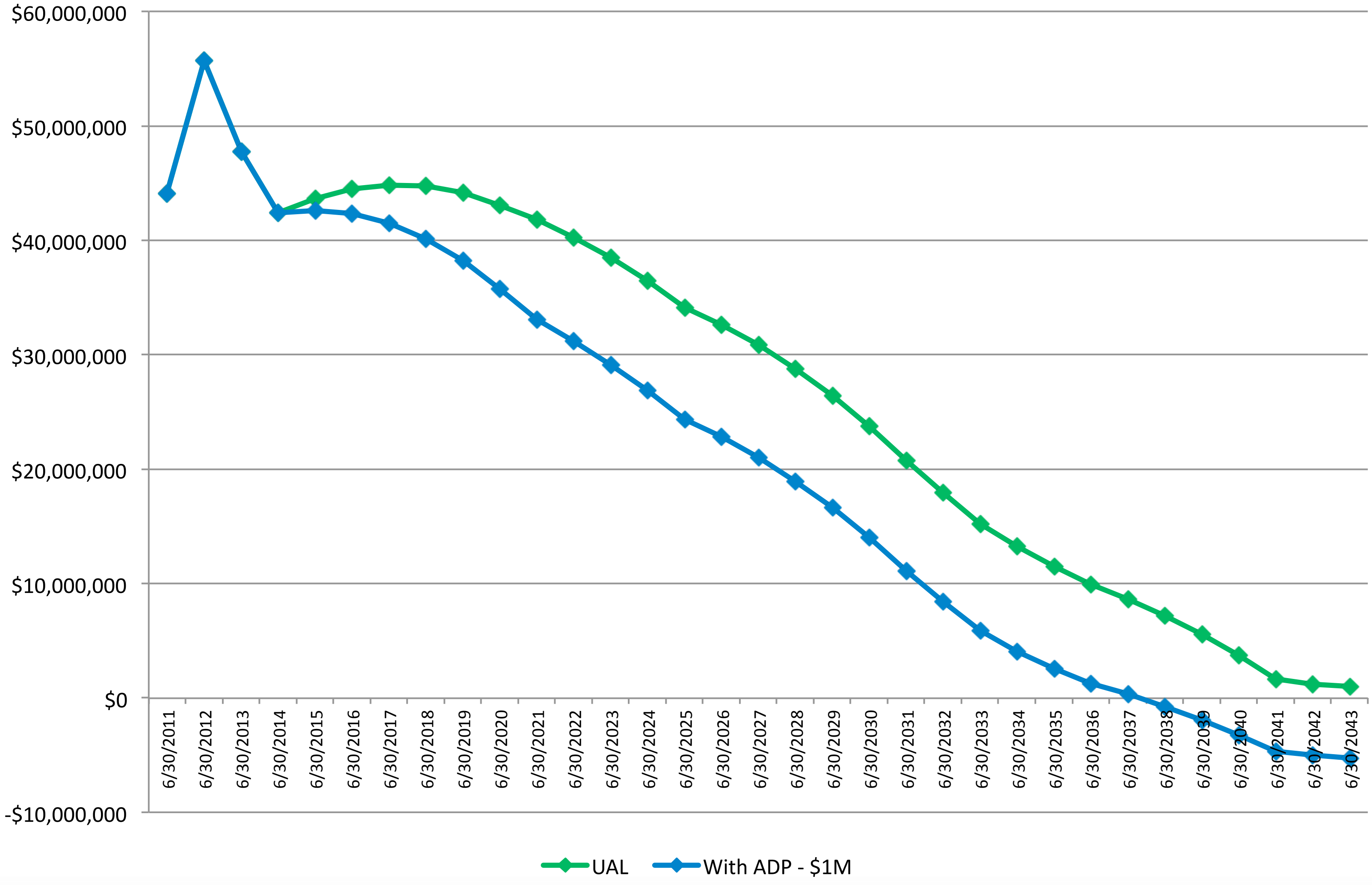
Period	2015-16 Rate	2015-16 Payment	Total Payments	Total Interest	Difference from Current Schedule
20	19.603%	$ 5,627,784	$ 151,220,669	$ 76,685,840	$ 27,341,001
15	23.800%	$ 6,832,573	$ 127,078,439	$ 52,543,610	$ 51,483,231

If you are interested in changing your plan's amortization schedule please contact your plan actuary to discuss further.

How Do We Pay Down Sooner?

- Option 2 – Additional Discretionary Payments (ADP)
  - Discuss with your Plan Actuary
  - Amounts in excess of the Minimum Payment
  - Full Flexibility annually

Option 2 - UAL with Discretionary Payments



Option 2 - ER Rates with Discretionary Payments

Questions?